

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

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|----------------|---|-----------------|-----------------|
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This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

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1. Details are given below of special bronze alloys produced by the following East German firms:

VEB Kupfer- und Messingwalzwerk, Hettstedt

VEB Sonderbronce, Berlin-Oberschoeneweide

VEB Halbzeugwerk, Auerhammer

VVB der Nichteisen-Metallindustrie, Aue

2. The following types of alloy are produced:

A. Bronze alloy equivalent to AlBz 4

Composition: Copper - 95 - 96.5%
Aluminum - 3.5 - 5%

Used for:

- (1) Acid-proof machines required in the paper and potash industries
- (2) Current conveyor springs; starting and damping bars (Anlauf- und Daempferstaebe)
- (3) Condenser tubes
- (4) Lye pump components
- (5) Contacts for railway signalling gear

Possible methods of treatment

- (1) Spot welding
- (2) Gas welding, when used with a suitable flux (zinc chloride with free hydrochloric acid) and preheated to 200 - 300° C.
- (3) Electric arc welding, but only when this is undertaken with a suitably coated electrode at the positive pole.

25 YEAR
RE-REVIEW

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- (4) Can be annealed at about 650° C.
- (5) It is heat proof up to 300° C. Malleable at 600 - 800° C. Can be deep drawn and is resistant to potash lye.

Form in which supplied:

- (1) Soft, in bars or wire
- (2) Semi-hard, as sheet
- (3) Hard, as tubing

B. Bronze equivalent to AlBz 9

Composition:

Copper - 90 - 93%

Aluminum - 7 - 10%

Possible uses:

- (1) Valve sets for combustion engines
- (2) Components for mine water pumps
- (3) Pulp machines used in paper making
- (4) Brine pumps
- (5) Fittings in sebacic acid plants

Possible methods of treatment:

- (1) Not suitable for welding
- (2) Suitable for gas welding only after preheating and with special flux over low flame.
- (3) Suitable for hot and cold treatment and deep drawing. Heat resistant up to 300° C. Malleable at 740 - 800° C.

Form in which supplied: Supplied as forgings, sheet, bars, wire and tubing.

C. Bronze equivalent to GAIBz 9

Composition:

Copper - 89 - 92%

Aluminum - 8 - 10%

Possible uses:

- (1) Worm wheels subject to great stress
- (2) Machine parts exposed to great heat or corrosion.

Possible methods of treatment: Suitable for gas welding after preheating.

Form in which supplied: As chilled, sand and pressure castings.

D. Bronze equivalent to AlMBz 10

Composition:

Copper - 88 - 90.5%

Aluminum - 8 - 11%

Iron - 1.5%

Manganese - 2%

Silicon - 1%

Possible uses:

- (1) Worms, slide bearings
- (2) Under water (sea) diaphragms
- (3) Starting and damping bars for electrical engineering.
- (4) Valve sets, water pressure controls, piston rods and cylinders.
- (5) Plungers for brine pumps.

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Possible methods of treatment:

- (1) Suitable for gas welding over low flame after preheating.
- (2) Suitable for deep drawing and heat treatment. Malleable at 800° C.

E. Bronze equivalent to GAlMBz 10

Composition:

Copper - 85%
Aluminum - 8 - 12%
Lead - 2%
Metal - 1%
Zinc - 1%
Plus small quantities of manganese, iron and silicon.

Possible uses:

- (1) Worm, bevel and gear wheels.
- (2) Super-heated steam fittings.
- (3) Blade wheels in salt water pumps.
- (4) High speed spindle nuts.

Possible methods of treatment:

- (1) Not suitable for gas welding.
- (2) Can be cast, but only at low temperatures.
- (3) Suitable for centrifugal, pressure and composite castings.

Form in which supplied:

Supplied as sand or chilled castings.

3. The average monthly output of these alloys, from the four factories listed in paragraph 1, is approximately 90 tons.

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